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IS 11524 (1986): Carbide Mandrels for Tube Drawing Dies (ISO Title : Tube Drawing Mandrels) [PGD 4: Metal Forming Machines]

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UDC 621·774·37·073 : 621·7-074

IS : 11524 - 1986
ISO 1651 - 1974

(Reaffirmed 2006)

Indian Standard

SPECIFICATION FOR CARBIDE MANDRELS FOR TUBE DRAWING DIES

(ISO Title : Tube Drawing Mandrels)

Small Tools Sectional Committee, EDC 45; Carbide Tips, Indexable Inserts and Blanks Subcommittee, EDC 45 : 5 [Ref : Doc : EDC 45 (4256)]

National Foreword

This Indian Standard which is identical with ISO 1651 - 1974 'Tube drawing mandrels', issued by the International Organization for Standardization (ISO), was adopted by the Indian Standards Institution on the recommendations of the Small Tools Sectional Committee and approved by the Mechanical Engineering Division Council.

In the adopted International Standard certain terminology and conventions are not identical with those used in Indian Standard; attention is specially drawn to the following:

Comma (,) has been used as a decimal marker, whereas in Indian Standards the practice is to use point (.) as the decimal marker.

Wherever the words 'International Standard' appear, referring to this standard, they shall be read as 'Indian Standard'.

Adopted 3 February 1986

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Gr 2

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the general dimensions of tube drawing mandrels with respect to their diameter d_1.

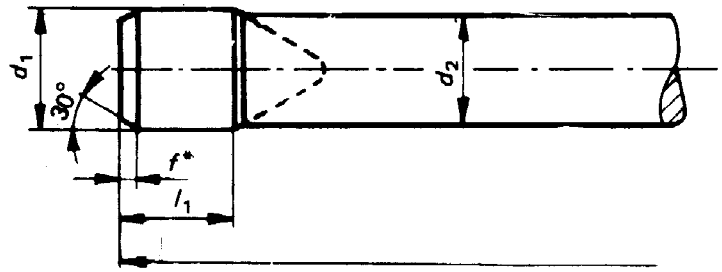
It applies to brazed drawing mandrels and sleeved drawing mandrels.

The dimensions have been determined taking existing practice into account as far as possible.

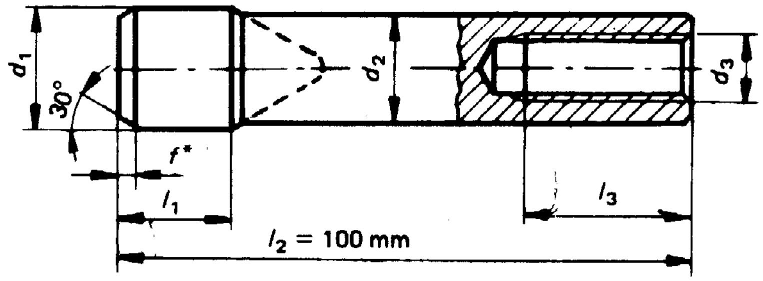
Threads are given in both measurement systems (metric and in inches) so as to allow the use of these mandrels on any machine.

2 BRAZED DRAWING MANDRELS

Form A — Welded on rod



Form B — With female thread



Form C — With male thread

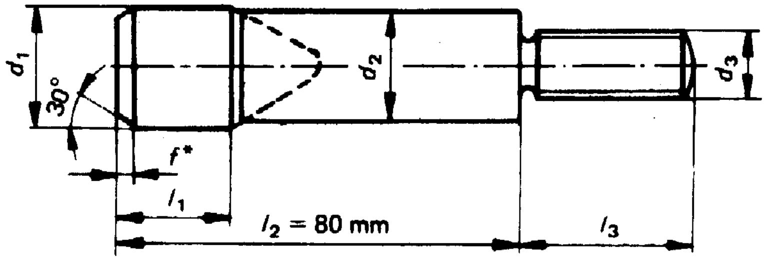


TABLE 1

Dimensions in millimetres

Form	d_1			d_2	l_1	f^*	Form B			Form C		
							d_3		l_3	d_3		l_3
	above	up to	tolerance			max.	Metric thread	Inch thread		Metric thread	Inch thread	
A	3	6	$^{+0,01}_{0}$	$d_2 = d_1$	10	2	—	—	—	—	—	—
	6	8			12							
B,C	8	10	$^{+0,01}_{0}$	$d_2 = d_1 {}^{-0,2}_{-0,6}$	15	2	M 5	No 10 – 32 UNF	10	M 6	$\frac{1}{4}$ – 20 UNC	12
	10	12,5			18		M 6	$\frac{1}{4}$ – 20 UNC	12	M 8	$\frac{5}{16}$ – 18 UNC	16
	12,5	16			20		M 8	$\frac{5}{16}$ – 18 UNC	16	M10	$\frac{3}{8}$ – 16 UNC	20
	16	20	$^{+0,02}_{0}$		22		M10	$\frac{3}{8}$ – 16 UNC	20	M12	$\frac{1}{2}$ – 13 UNC	24
	20	25			25		M12	$\frac{1}{2}$ – 13 UNC	24	M16	$\frac{5}{8}$ – 11 UNC	32

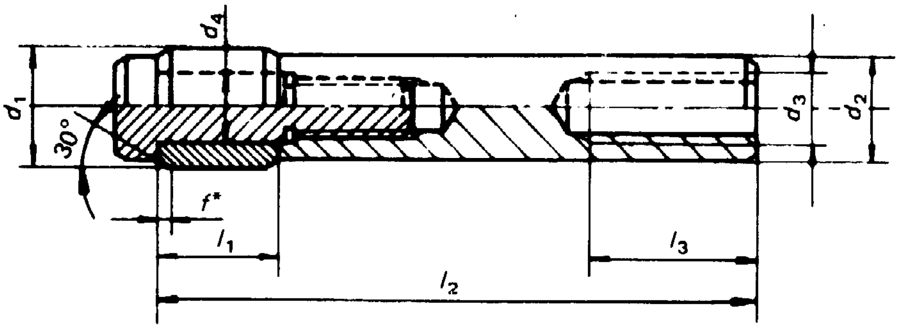
* A radius can be provided in place of a chamfer if required.

** The total length should be subject to agreement between manufacturer and purchaser.

NOTE — Details not stated are left to the discretion of the manufacturer.

3 SLEEVED DRAWING MANDRELS

Form D – With female thread



Form E – With male thread

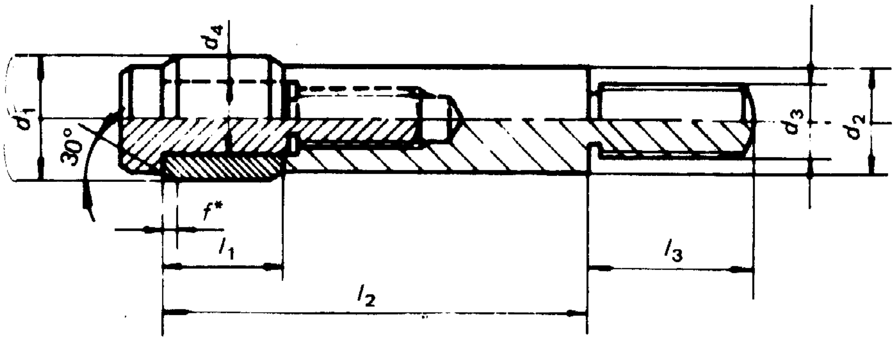


TABLE 2

Dimensions in millimetres

Form	d_1			d_2	d_4	l_1	f*	Form D				Form E			
								d_3		l_2	l_3	d_3		l_2	l_3
	above	up to	tolerance				max.	Metric thread	Inch thread			Metric thread	Inch thread		
D,E	8	10	$^{+0,01}_{0}$	$d_2 = d_1\,{}^{-0,2}_{-0,6}$	$d_4 \approx 0,5\,d_1$	15	2	M 5	Nº 10 – 32 UNF	100	10	M 6	$\frac{1}{4}$ – 20 UNC	80	12
	10	12,5				18		M 6	$\frac{1}{4}$ – 20 UNC		12	M 8	$\frac{5}{16}$ – 18 UNC		16
	12,5	16				20		M 8	$\frac{5}{16}$ – 18 UNC		16	M10	$\frac{3}{8}$ – 16 UNC		20
	16	20	$^{+0,02}_{0}$			22	2	M10	$\frac{3}{8}$ – 16 UNC	100	20	M12	$\frac{1}{2}$ – 13 UNC	80	24
	20	25				25		M12	$\frac{1}{2}$ – 13 UNC		24	M16	$\frac{5}{8}$ – 11 UNC		32
	25	32				28		M16	$\frac{5}{8}$ – 11 UNC	150	32			110	
	32	40	$^{+0,02}_{0}$			30	2	M20	$\frac{3}{4}$ – 10 UNC	150	35	M20	$\frac{3}{4}$ – 10 UNC	110	35
	40	50				35		M24	1 – 8 UNC		40	M24	1 – 8 UNC		40
	50	60						M30	1 $\frac{1}{4}$ 7 UNC		45	M30	1 $\frac{1}{4}$ – 7 UNC		45
	60	70	$^{+0,03}_{0}$			40	2	M30	1 $\frac{1}{4}$ – 7 UNC	180	45	M30	1 $\frac{1}{4}$ 7 UNC	125	45
	70	80						M36	1 $\frac{1}{2}$ – 6 UNC		54	M36	1 $\frac{1}{2}$ – 6 UNC		54
	80	100						M42	1 $\frac{3}{4}$ – 5 UNC		63	M42	1 $\frac{3}{4}$ 5 UNC		63

A radius can be provided in place of a chamfer if required.

NOTE – Details not stated are left to the discretion of the manufacturer.